Page 2 of 15

## In the claims

Please amend the claims as follows:

1. (currently amended) A compound of the general formula (I)

 $X(B)_m$ 

**(I)** 

wherein

X is an m-valent unit and

B are identical or different and denote K-R, wherein

K is a bond or is  $A^1-(A^2-A^3)_{k}$ -sp, wherein

A1 is (CH2), Y(CH2), wherein

Y is >C=O, >NH, -O-, -S- or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A<sup>2</sup> is -NHCO-, -CONH-, -OCONH- or SCONH-, or [[ is]] -CO-,

 $A^3$  is  $(CH_2)_r$ ,  $O(CH_2)_r$ ,  $NH(CH_2)_r$ ,  $S(CH_2)_r$  or -(CHQ)-, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

R is hydrogen[[;]] or a ligand suitable for specific bonding to a receptor;-a marker-molecule; or a catalytically active group; and

m is at least 2,

with the proviso that

- (1) in the compound at least one R is not hydrogen,
- (2) there are at least two K that are not a bond, and
- (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment  $X(K)_m$  is less than 20,000.

- 2. (previously presented) A compound according to claim 1, wherein the molar mass of the fragment X(K)<sub>m</sub> is less than 4,000.
  - 3. (previously presented) A compound according to claim 1, wherein
    - m is an integer from 2 to 4, and
    - is CH<sub>4-m</sub>, NH<sub>3-m</sub>, N<sup>+</sup>H<sub>4-m</sub>, >P- (when m = 3), >P<sup>+</sup>< (when m = 4), >B- (when m = 3), a linear atom group  $C_2$  H<sub>6-m</sub>, >CH(CH<sub>2</sub>)<sub>z</sub>CH<, >C=C<, >N- N<, >N(CH<sub>2</sub>)<sub>z</sub>N< wherein z = 2 6, when m = 4), a carbocyclic atom group  $C_6$ H<sub>6-m</sub>,  $C_6$ H<sub>12-m</sub>, or a heterocyclic atom group  $C_3$ N<sub>3</sub> (when m = 3),  $C_4$ N<sub>2</sub> (when m = 4).
- 4. (previously presented) A compound according to claim 1, wherein there are at least 3 K.
- 5. (previously presented) A compound according to claim 1, wherein at least two R are not hydrogen.
- 6. (previously presented) A compound according to claim 1, wherein at least three R are not hydrogen.
  - 7. (canceled)
- 8. (currently amended) A compound according to claim 1, wherein the saccharide ligand R is sialic acid, sialyl lactose, sialyl lactosamine, lactose, mannose, Galα1-3Gal, Gal1α-3(Fucα1-2)Gal, GalNAcα1-3(Fucα1-2)Gal, Neu5Acα2-6GalNAc, SiaLe<sup>A</sup>, SiaLe<sup>X</sup>, HSO<sub>3</sub>Le<sup>A</sup>, HSO<sub>3</sub>Le<sup>X</sup>, Galα1-3Galβ1-4GlcNAc, Galα1-3Galβ1-4Glc, HSO<sub>3</sub>GlcAβ1-3Galβ1-4GlcNAc, N-acetyl-lactosamine or polylactosamine, or wherein the saccharide ligand R is sialic acid benzyl glycoside, HSO<sub>3</sub>GlcAβ1-3Gal, HSO<sub>3</sub>GlcAβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4Glc, GalNAcα,

Application Serial No.: 10/019,902

Page 4 of 15

GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAc, Galα1-3(Fucα1-2)Galβ1-4GlcNAc, HSO<sub>3</sub>(Sia)Le<sup>X</sup>, HSO<sub>3</sub>(Sia)Le<sup>A</sup>, Le<sup>Y</sup>, GlcNAcβ1-6(GlcNAcβ1-3)Galβ1-4Glc, GalNAcβ1-4(Neu5Acα2-3)Galβ1-4Glc, mannose-6-phosphate, GalNAcβ1-4GlcNAc, oligo-sialic acid, N-glycolylneuraminic acid, Galα1-4Galβ1-4Glc, or Galα1-4Galβ1-4GlcNAc.

- 9. (previously presented) A compound according to claim 1, wherein
- m is an integer from 2 to 4,
- X is CH<sub>4-m</sub>,
- $A^1$  is  $CH_2$ ,
- A<sup>2</sup> is NHCO,
- $A^3$  is  $CH_2$ ,
- k is 8,
- sp is (CH<sub>2</sub>)<sub>3</sub>CONHCH<sub>2</sub>CONHC<sub>6</sub>H<sub>4</sub>-4-CH<sub>2</sub>O- and
- R is Neu5Acα2-6Galβ1-4GlcNAc.
- 10. (currently amended) An aggregate of the general formula (II):

$$\{X(B)_m\}_n$$

wherein X(B)<sub>m</sub> may be identical or different and denote a compound of the general formula (I),

$$X(B)_m$$
 (I)

· (II)

wherein

- X is an m-valent unit and
- B are identical or different and denote K-R, wherein
  - K is a bond or is  $A^1-(A^2-A^3)_k$ -sp, wherein
    - $A^1$  is  $(CH_2)_t Y (CH_2)_u$ , wherein
    - Y is >C=O, >NH, -O-, -S- or a bond,
    - t is an integer from 0 to 6 and
    - u is an integer from 0 to 6,
    - A<sup>2</sup> is -NHCO-, -CONH-, -OCONH- or SCONH-, or [[ is]] -CO-,
    - $A^3$  is  $(CH_2)_t$ ,  $O(CH_2)_t$ ,  $NH(CH_2)_t$ ,  $S(CH_2)_t$  or  $-(CHQ)_-$ , wherein

Application Serial No.: 10/019,902

Page 5 of 15

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

R is hydrogen[[;]] or a ligand suitable for specific bonding to a receptor; a marker molecule; or a catalytically active group; and

m is at least 2, with the proviso that

- (1) in the compound at least one R is not hydrogen,
- (2) there are at least two K that are not a bond, and
- (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment X(K)<sub>m</sub> is less than 20,000, and
  - n is from 2 to 100,000,

and wherein X(B)<sub>m</sub> are non-covalently bonded.

- 11. (previously presented) An aggregate according to claim 10 having a leaf-like, linear, cyclic, polycyclic, polyhedral, spherical or dendritic structure.
- 12. (currently amended) An aggregate according to claim 10 of two or more different compounds comprising a compound of the general formula (I)

$$X(B)_m$$
 (I)

wherein

- X is an m-valent unit and
- B are identical or different and denote K-R, wherein

K is a bond or is  $A^1-(A^2-A^3)_k$ -sp, wherein

 $A^{1}$  is  $(CH_{2})_{t}Y(CH_{2})_{u}$ , wherein

Y is >C=O, >NH, -O-, -S- or a bond,

Application Serial No.: 10/019,902

Page 6 of 15

u is an integer from 0 to 6,

A<sup>2</sup> is -NHCO-, -CONH-, -OCONH- or SCONH-, or [[ is]] -CO-,

 $A^3$  is  $(CH_2)_r$ ,  $O(CH_2)_r$ ,  $NH(CH_2)_r$ ,  $S(CH_2)_r$  or  $-(CHQ)_r$ , wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

R is hydrogen[[;]] or a ligand suitable for specific bonding to a receptor;-a marker molecule; or a catalytically active group; and

m is at least 2, with the proviso that

- (1) in the compound at least one R is not hydrogen.
- (2) there are at least two K that are not a bond, and
- (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment  $X(K)_m$  is less than 20,000.
  - 13. (canceled)
- 14. (previously presented) A method according to claim 27, further comprising adding a concentrated salt solution, changing the pH or the temperature, or adding organic solvents.
- 15. (currently amended) A method for changing the structure of an aggregate of the general formula (II)

 $\{X(B)_m\}_n \tag{II}$ 

wherein X(B)<sub>m</sub> may be identical or different and denote a compound of the general formula (I),

 $X(B)_m$  (I)

wherein

Application Serial No.: 10/019,902

Page 7 of 15

X is an m-valent unit and

B are identical or different and denote K-R, wherein

K is a bond or is  $A^1-(A^2-A^3)_k$ -sp, wherein

 $A^1$  is  $(CH_2)_t Y(CH_2)_u$ , wherein

Y is >C=O, >NH, -O-, -S- or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A<sup>2</sup> is -NHCO-, -CONH-, -OCONH- or SCONH-, or[[ is]] -CO-,

 $A^3$  is  $(CH_2)_r$ ,  $O(CH_2)_r$ ,  $NH(CH_2)_r$ ,  $S(CH_2)_r$  or  $-(CHQ)_r$ , wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

R is hydrogen[[;]] or a ligand suitable for specific bonding to a receptor; a marker molecule; or a catalytically active group; and

m is at least 2, with the proviso that

- (1) in the compound at least one R is not hydrogen,
- (2) there are at least two K that are not a bond, and
- (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment  $X(K)_m$  is less than 20,000, and
- n is from 2 to 100,000,

and wherein X(B)<sub>m</sub> are non-covalently bonded,

further comprising adding a concentrated salt solution, changing the temperature or the pH and/or adding urea, trifluoroethanol or peptides.

- 16. (previously presented) A method according to claim 27 further comprising increasing the specific physiological activities of molecules by incorporating a radical R into a compound of the general formula (I).
  - 17. (canceled)
- 18. (currently amended) A method of treating diseases arising from inflammation, viral and bacterial infections, influenza viruses, selectin-mediated inflammatory processes, tumour metastases, or in the neutralisation of antibodies in autoimmune disorders and transplants; said method comprising administering a compound of the general formula (I)

 $X(B)_m$  (I)

wherein

- X is an m-valent unit and
- B are identical or different and denote K-R, wherein

K is a bond or is  $A^1-(A^2-A^3)_k$ -sp, wherein

A<sup>1</sup> is (CH<sub>2</sub>)<sub>t</sub>Y(CH<sub>2</sub>)<sub>u</sub>, wherein

Y is >C=O, >NH, -O-, -S- or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A<sup>2</sup> is -NHCO-, -CONH-, -OCONH- or SCONH-, or [[is]] -CO-,

 $A^3$  is  $(CH_2)_r$ ,  $O(CH_2)_r$ ,  $NH(CH_2)_r$ ,  $S(CH_2)_r$  or  $-(CHQ)_r$ , wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

- R is hydrogen[[;]] or a ligand suitable for specific bonding to a receptor;—a marker molecule; or a catalytically active group; and
- m is at least 2, with the proviso that
- (1) in the compound at least one R is not hydrogen,

Page 9 of 15

- (2) there are at least two K that are not a bond, and
- (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment X(K)<sub>m</sub> is less than 20,000; or administering into an aggregate of the general formula (II)

$$\{X(B)_m\}_n$$
 (II)

wherein

X(B)<sub>m</sub> may be identical or different and denote a compound of the general formula (I), and n is from 2 to 100,000, and wherein X(B)<sub>m</sub> are non-covalently bonded.

- 19. (canceled)
- 20. (previously presented) A method according to claim 18 further comprising preparing functionalized molecular surfaces.
  - 21. (canceled)
  - 22. (canceled)
  - 23. (currently amended) A compound of the general formula-(III) (I),

 $X(B)_m$ 

(I) <del>(III)</del>

wherein

- X is an m-valent unit and
- B are identical or different and denote[[K-H]] K-R, wherein

K is a bond or is  $A^1-(A^2-A^3)_k$ -sp, wherein

A<sup>1</sup> is (CH<sub>2</sub>)<sub>t</sub>Y(CH<sub>2</sub>)<sub>u</sub>, wherein

Y is >C=O, >NH, -O-, -S- or a bond,

Page 10 of 15

u is an integer from 0 to 6,

A<sup>2</sup> is -NHCO-, -CONH-, -OCONH- or SCONH-, or [[ is]] -CO-,

A<sup>3</sup> is (CH<sub>2</sub>)<sub>r</sub>, O(CH<sub>2</sub>)<sub>r</sub>, NH(CH<sub>2</sub>)<sub>r</sub>, S(CH<sub>2</sub>)<sub>r</sub> or -(CHQ)-, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

 $\underline{R}$  is hydrogen or a ligand suitable for specific bonding to a receptor; and  $\underline{m}$  is at least 2, with the proviso that

- (1) X, B and m are so selected that an intermolecular association of the K in liquid phase is possible, especially under aqueous conditions, by the formation of hydrogen bonds, with formation of aggregates, and
- (2) the molar mass of the fragment X(K)<sub>m</sub> is less than 20,000, especially less than 4000.

24-26. (canceled)

27. (currently amended) A method of preparing an aggregate comprising: preparing a compound of the general formula (II)

$$\{X(B)_m\}_n$$

(II)

wherein

X(B)<sub>m</sub> may be identical or different and denote a compound of the general formula (I),

$$X(B)_{m}$$
 (I)

wherein

X is an m-valent unit and

B are identical or different and denote K-R, wherein

K is a bond or is  $A^1-(A^2-A^3)_k$ -sp, wherein

A<sup>1</sup> is (CH<sub>2</sub>)<sub>t</sub>Y(CH<sub>2</sub>)<sub>u</sub>, wherein

Y is >C=O, >NH, -O-, -S- or a bond,

Page 11 of 15

u is an integer from 0 to 6,

A<sup>2</sup> is -NHCO-, -CONH-, -OCONH- or SCONH-, or[[ is]] -CO-,

A<sup>3</sup> is (CH<sub>2</sub>)<sub>r</sub>, O(CH<sub>2</sub>)<sub>r</sub>, NH(CH<sub>2</sub>)<sub>r</sub>, S(CH<sub>2</sub>)<sub>r</sub> or -(CHQ)-, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

R is hydrogen[[;]] or a ligand suitable for specific bonding to a receptor; a marker molecule; or a catalytically active group; and

m is at least 2, with the proviso that

- (1) in the compound at least one R is not hydrogen,
- (2) there are at least two K that are not a bond, and
- (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment X(K)<sub>m</sub> is less than 20,000, and
- n is from 2 to 100,000,

and wherein X(B)<sub>m</sub> are non-covalently bonded.

28. (currently amended) A method of preparing a therapeutic drug comprising: preparing the compound of the general formula (I)

 $X(B)_m$  (I)

wherein

- X is an m-valent unit and
- B are identical or different and denote K-R, wherein

K is a bond or is  $A^1-(A^2-A^3)_k$ -sp, wherein

A<sup>1</sup> is (CH<sub>2</sub>)<sub>t</sub>Y(CH<sub>2</sub>)<sub>u</sub>, wherein

Y is >C=O, >NH, -O-, -S- or a bond,

Application Serial No.: 10/019,902

Page 12 of 15

u is an integer from 0 to 6,

A<sup>2</sup> is -NHCO-, -CONH-, -OCONH- or SCONH-, or [[is]] -CO-,

A<sup>3</sup> is (CH<sub>2</sub>)<sub>r</sub>, O(CH<sub>2</sub>)<sub>r</sub>, NH(CH<sub>2</sub>)<sub>r</sub>, S(CH<sub>2</sub>)<sub>r</sub> or -(CHQ)-, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

R is hydrogen[[;]] or a ligand suitable for specific bonding to a receptor; a marker-molecule; or a catalytically active group; and

m is at least 2, with the proviso that

- (1) in the compound at least one R is not hydrogen,
- (2) there are at least two K that are not a bond, and
- (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment X(K)<sub>m</sub> is less than 20,000; or preparing the compound of the general formula (II):

$$\{X(B)_{m}\}_{n} \tag{II}$$

wherein

X(B)<sub>m</sub> may be identical or different and denote a compound of the general formula (I), and

n is from 2 to 100,000,

and wherein X(B)<sub>m</sub> are non-covalently bonded; and

a pharmaceutically acceptable carrier.

29. (canceled)